

Att'y Dkt. No. US-1520

U.S. App. No: 10/613,990**IN THE CLAIMS:**

*Kindly rewrite Claims 1-10 as follows, in accordance with 37 C.F.R. § 1.121:*

1. (Currently amended) A  $\gamma$ -proteobacterium ~~having an ability to produce a target substance and modified so that an the production of ArcA protein does not normally function is reduced or eliminated~~, wherein said  $\gamma$ -proteobacterium has an improved ability to produce a target substance synthesized via the tricarboxylic acid cycle as compared to a wild-type  $\gamma$ -proteobacterium.

2. (Currently amended) The  $\gamma$ -proteobacterium according to claim 1, wherein ~~the said ArcA protein that normally functions is~~ selected from the group consisting of a protein defined in the following (A) or (B):

(A) a protein having comprising the amino acid sequence of SEQ ID NO: 32; and

(B) ~~a protein having the amino acid sequence of SEQ ID NO: 32 including substitution, deletion, insertion or addition of one or several amino acids and improving an ability to produce a target substance when the protein does not normally function in the  $\gamma$  proteobacterium compared with the case where the protein normally functions comprising up to 10 amino acid substitutions, deletions, or insertions in the amino acid sequence of SEQ ID NO: 32.~~

3. (Currently amended) The  $\gamma$ -proteobacterium according to claim 1, wherein ~~the said ArcA protein is selected from the group consisting of: that normally functions is a protein having 70% or more of homology to the amino acid sequence of SEQ ID NO: 32 and improving an ability to produce a target substance when the protein does not normally function in the  $\gamma$  proteobacterium compared with the case where the protein normally functions.~~

(A) a protein comprising the amino acid sequence of SEQ ID NO: 32; and

(B) a protein comprising an amino acid sequence which is at least 70% homologous to SEQ ID NO: 32.

4. (Canceled)

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5. (Currently amended) The  $\gamma$ -proteobacterium according to claim 1, wherein said production of the ArcA protein is reduced or eliminated ~~does not normally function~~ by means of disruption of an *arcA* gene on a chromosome.

6. (Currently amended) The  $\gamma$ -proteobacterium according to claim 5, wherein the said *arcA* gene is selected from the group consisting of: ~~DNA defined in the following (a) or (b):~~

(a) DNA containing the nucleotide sequence of the nucleotide number 101 to 817 of SEQ ID NO: 31; and

(b) DNA which is able to hybridize ~~hybridizable~~ with the nucleotide sequence of the nucleotide numbers 101 to 817 of SEQ ID NO: 31 ~~or a probe that can be produced from the nucleotide sequence under the stringent condition conditions comprising washing at a salt concentration of 1 x SSC, 0.1% SDS at 65° C and coding for a protein that improves an ability to produce a target substance when the protein does not normally function compared with the case where the protein normally functions.~~

7. (Currently amended) The  $\gamma$ -proteobacterium according to claim 1, which is comprising a bacterium belonging to the genus *Escherichia*.

8. (Currently amended) The  $\gamma$ -proteobacterium according to claim 1, wherein the said target substance is comprises an L-amino acid.

9. (Currently amended) The  $\gamma$ -proteobacterium according to claim 8, wherein the said L-amino acid is selected from the group consisting of L-lysine, L-glutamic acid, and L-arginine, and L-threonine.

10. (Currently amended) A method for producing a target substance synthesized via the tricarboxylic acid cycle, which comprises comprising:

(a) -culturing the  $\gamma$ -proteobacterium according to any one of claims 1 to 9 claim 1 in a medium ~~to produce and accumulate the target substance in the medium or cells;~~ and

(b) collecting the said target substance from the medium or cells culture.